Special Issue

Quantum Transport Theory as a Tool for Information Processing: The Role of Dissipation and Topological Matter

Message from the Guest Editors

A primordial challenge of the future quantum technologies is the processing of information in quantum circuits. The information unit represented by a qubit can be implemented in low-dimensional nanostructures such as quantum dots or nanowires as major examples. This Special Issue will address key questions such as (1) how information is transported and its relation with the amount of dissipated heat in both trivial and topological matter and (2) how transport of information occurs in systems with intelligent feedback that act like Maxwell's demons in quantum circuits. The conclusions derived from this Special Issue will serve as an impulse for rapid and secure development of quantum technologies that can be utilized for information processing purposes.

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The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

Entropy is an online open access journal providing an advanced forum for the development and/or application of entropic and information-theoretic studies in a wide variety of applications. *Entropy* is inviting innovative and insightful contributions. Please consider *Entropy* as an exceptional home for your manuscript.

Editor-in-Chief

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